

CLAIMS

1. A method of transmitting data from a transmitter to a receiver of a diversity communication system comprising the steps of:

encoding data received from a signal source to generate Galois field (GF) symbols;

modifying redundant GF symbols by an arithmetic operation;

mapping the GF symbols and the modified redundant GF symbols using QPSK as modulation scheme; and

transmitting the QPSK modulation symbols and the modified redundant QPSK symbols to the receiver.
2. The method according to claim 1, wherein the step of modifying redundant GF symbols comprises multiplying an input data symbol sequence with a multiplier.
3. The method according to claim 2, wherein the multiplier is dependent on a diversity parameter.
4. The method according to one of claims 1 to 3, wherein the GF symbols are obtained by an operation over a GF(4) field with four elements.
5. The method according to claim 4, wherein the input GF symbols are converted to GF(4) symbols prior to applying the arithmetic operation.
6. The method according to claims 1 to 5, wherein the arithmetic operation is defined by a primitive polynomial.

7. The method according to claim 3, wherein the diversity parameter is changed when data to be transmitted carries the same information that have already been sent to the receiver.
8. The method according to claims 1 to 7, wherein the redundant modified QPSK symbols are transmitted within the same data packet with the QPSK modulation symbols.
9. The method according to claims 1-8, wherein the redundant modified QPSK symbols are transmitted over multiple diversity branches.
10. A transmitter of a diversity communication system comprising:
 - a data encoding unit (101) for generating GF symbols,
 - a modifying unit (102) for generating modified redundant GF symbols using an arithmetic operation;
 - a mapping unit (104) for mapping the GF symbols and the modified redundant GF symbols using QPSK as modulation scheme; and
 - a transmitting unit (105) for transmitting the QPSK modulated GF symbols and the modified redundant QPSK symbols.
11. The transmitter according to claim 10, wherein the modifying unit (102) is a multiplier (102) for multiplying the GF symbols with a multiplier.
12. The transmitter according to claim 10 or 11, wherein the multiplier is a look-up table according to which the input GF symbols are modified using a diversity parameter.

13. The transmitter according to one of claims 10 to 12, wherein the transmitter is an ARQ transmitter for sending redundancy versions of already sent data symbols having identical information.